WHAT IS CLAIMED IS:

1.   For use in a point-to-multipoint wireless network, a base station for transmitting downstream data packets in a downstream traffic channel to customer premises equipment (CPE) devices and receiving upstream data packets in an upstream traffic channel from said CPE devices, wherein said base station is capable of determining queue status of at least one queue associated with at least one application in each of said CPE devices and, in response to said determination, said base station is capable of re-allocating bandwidth from a first queue associated with a first CPE device to a second queue.

2.   The base station as set forth in Claim 1 wherein said second queue is associated with said first CPE device.

3.   The base station as set forth in Claim 1 wherein said second queue is associated with a second CPE device separate from said first CPE device.

4.   The base station as set forth in Claim 1 wherein said base station allocates bandwidth to said second queue by

transmitting a first downstream data packet, wherein said first downstream data packet comprises a Next Time Slot field capable of assigning a CPE device associated with said second queue to transmit an upstream data packet in said upstream traffic channel during a next time slot following receipt of said first downstream data packet.

5.   The base station as set forth in Claim 4 wherein said Next Time slot field is part of a header of said first downstream data packet.

6.   The base station as set forth in Claim 4 wherein said first downstream data packet comprises a payload of data directed to said first CPE device.

7.   The base station as set forth in Claim 4 wherein said first downstream data packet comprises a payload of data directed to a CPE device other than said first CPE device.

8.   A point-to-multipoint wireless network comprising a plurality of base stations, wherein each of said base stations transmits downstream data packets in a downstream traffic channel to customer premises equipment (CPE) devices and receives upstream data packet in an upstream traffic channel from said CPE devices, wherein said each base station is capable of determining queue status of at least one queue associated with at least one application in each of said CPE devices and, in response to said determination, said each base station is capable of re-allocating bandwidth from a first queue associated with a first CPE device to a second queue.

9.   The point-to-multipoint wireless network as set forth in Claim 8 wherein said second queue is associated with said first CPE device.

10.   The point-to-multipoint wireless network as set forth in Claim 8 wherein said second queue is associated with a second CPE device separate from said first CPE device.

11.   The point-to-multipoint wireless network as set forth in

Claim 8 wherein said each base station allocates bandwidth to said

second queue by transmitting a first downstream data packet,

wherein said first downstream data packet comprises a Next Time

Slot field capable of assigning a CPE device associated with said

second queue to transmit an upstream data packet in said upstream

traffic channel during a next time slot following receipt of said

first downstream data packet.

12. The point-to-multipoint wireless network as set forth in

Claim 11 wherein said Next Time slot field is part of a header of

said first downstream data packet.

13. The point-to-multipoint wireless network as set forth in

Claim 11 wherein said first downstream data packet comprises a

payload of data directed to said first CPE device.

14. The point-to-multipoint wireless network as set forth in

Claim 11 wherein said first downstream data packet comprises a

payload of data directed to a CPE device other than said first CPE

device.

15. For use in a base station of a point-to-multipoint
wireless network, the base station capable of communicating with a
plurality of customer premises equipment (CPE) devices, a method of
reallocating bandwidth among the CPE devices comprising the steps
of:

transmitting downstream data packets in a downstream traffic
channel to the CPE devices;

receiving upstream data packets in an upstream traffic channel
from the CPE devices;

determining queue status of at least one queue associated with
at least one application in each of the CPE devices; and

in response to the determination, reallocating bandwidth from
a first queue associated with a first CPE device to a second queue.

16. The method as set forth in Claim 15 wherein the second
queue is associated with one of: i) the first CPE device and 2) a
second CPE device separate from the first CPE device.

17.   The method as set forth in Claim 15 wherein the step of reallocating bandwidth comprises the sub-step of:

transmitting a first downstream data packet, wherein the first downstream data packet comprises a Next Time Slot field capable of assigning a CPE device associated with the second queue to transmit an upstream data packet in the upstream traffic channel during a next time slot following receipt of the first downstream data packet.

18.   The method as set forth in Claim 17 wherein the Next Time slot field is part of a header of the first downstream data packet.

19.   The method as set forth in Claim 17 wherein the first downstream data packet comprises a payload of data directed to the first CPE device.

20.   A customer premises equipment (CPE) device for use in a point-to-multipoint wireless network comprising a plurality of base stations, said CPE device capable of transmitting upstream data packets in an upstream traffic channel to a first one of said plurality of base station and receiving downstream data packets in a downstream traffic channel from said first base station, wherein said CPE device detects in a first downstream data packet a Next Time Slot field assigning said CPE device to transmit a first upstream data packet in said upstream traffic channel during a next time slot following receipt of said first downstream data packet and wherein said CPE device transmits in a header of said first upstream data packet a first queue status associated a first queue in said CPE device.